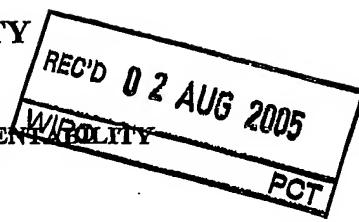


**PATENT COOPERATION TREATY  
PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENT AVAILABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference  3220-75141	FOR FURTHER ACTION      See Form PCT/IPEA/416																									
International application No.  PCT/US04/14581	International filing date (day/month/year)  11 May 2004 (11.05.2004)	Priority date (day/month/year)  12 May 2003 (12.05.2003)																								
International Patent Classification (IPC) or national classification and IPC  IPC(7): A61K 31/473, 31/4745 ; C07D 471/12, 491/02, 221/18 and US CL: 514/284, 283, 280, 279 ; 546/61, 51, 48, 41																										
Applicant  PURDUE RESEARCH FOUNDATION																										
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>9</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4. of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand  13 May 2005 (13.05.2005)	Date of completion of this report  15 July 2005 (15.07.2005)																									
Name and mailing address of the IPEA/US  Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer CHARANJIT S. AULAKH <i>Valerie Bell-Karris</i> Telephone No. (571)272-1600																									

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/14581

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of
- international search (under Rules 12.3 and 23.1(b))
  - publication of the international application (under Rule 12.4)
  - international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- the international application as originally filed/furnished

- the description:

pages 1-28 as originally filed/furnished

pages\* NONE received by this Authority on \_\_\_\_\_pages\* NONE received by this Authority on \_\_\_\_\_

- the claims:

pages A/ONE as originally filed/furnishedpages\* NONE as amended (together with any statement) under Article 19pages\* 29-37 received by this Authority on 13 May 2005 (13.05.2005)pages\* NONE received by this Authority on \_\_\_\_\_

- the drawings:

pages 1-4 as originally filed/furnishedpages\* NONE received by this Authority on \_\_\_\_\_pages\* NONE received by this Authority on \_\_\_\_\_

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.

PCT/US04/14581

**Box No. IV Lack of unity of invention**

1.  In response to the invitation to restrict or pay additional fees the applicant has:  
 restricted the claims.  
 paid additional fees.  
 paid additional fees under protest.  
 neither restricted nor paid additional fees.
2.  This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:  
 complied with.  
 not complied with for the following reasons:  
See the lack of unity section of the International Search Report (Form PCT/ISA/210)
4. Consequently, this report has been established in respect of the following parts of the international application:  
 all parts  
 the parts relating to claims Nos. \_\_\_\_\_

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US04/14581**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>1-25</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-25</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-25</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and Explanations (Rule 70.7)**

Claims 1-25 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the instant compounds of formulae of claims 1 and 15, pharmaceutical compositions containing these compounds and a method of using these compounds.

Claims 1-25 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

## CLAIMS:

## 1. A compound of the formula:



5 wherein

Q is oxygen or sulfur;

X is hydrogen and Y is  $\text{CHR}^2\text{R}^3$ ,  $\text{NHR}^2$ ,  $\text{NHOR}^2$ , or  $\text{NHNR}^2\text{R}$ ; or X and Y are taken together to form  $=\text{CR}^2\text{R}^3$ ;  $=\text{NR}^2$ ;  $=\text{NOR}^2$ ; or  $=\text{NNR}^2\text{R}^3$ ; $\text{R}^1$ ,  $\text{R}^2$ , and  $\text{R}^3$  are each independently selected from the group

10 consisting of hydrogen and a radical  $-(\text{CH}_2)_m\text{Z}$ , where m is an integer from 0-6 and Z is selected from the group consisting of halogen, hydroxy, formyl,  $\text{C}_1\text{-C}_6$  alkanoyloxy, optionally substituted benzoyloxy,  $\text{C}_1\text{-C}_6$  alkyl,  $\text{C}_1\text{-C}_6$  alkoxy,  $\text{C}_3\text{-C}_8$  cycloalkyl,  $\text{C}_3\text{-C}_8$  cycloalkoxy,  $\text{C}_2\text{-C}_6$  alkenyl,  $\text{C}_2\text{-C}_6$  alkynyl,  $\text{C}_1\text{-C}_6$  haloalkyl,  $\text{C}_1\text{-C}_6$  haloalkoxy,  $\text{C}_3\text{-C}_8$  halocycloalkyl,  $\text{C}_3\text{-C}_8$  halocycloalkoxy, amino,  $\text{C}_1\text{-C}_6$  alkylamino,  $(\text{C}_1\text{-C}_6$  alkyl) $(\text{C}_1\text{-C}_6$

15 alkyl)amino, alkylcarbonylamino,  $\text{N}(\text{C}_1\text{-C}_6$  alkyl)alkylcarbonylamino, aminoalkyl,  $\text{C}_1\text{-C}_6$  alkylaminoalkyl,  $(\text{C}_1\text{-C}_6$  alkyl) $(\text{C}_1\text{-C}_6$  alkyl)aminoalkyl, alkylcarbonylaminoalkyl,  $\text{N}(\text{C}_1\text{-C}_6$  alkyl)alkylcarbonylaminoalkyl, cyano, nitro,  $\text{C}_1\text{-C}_6$  alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z is selected from the group consisting of  $-\text{N}_3$ ,

20  $-\text{CO}_2\text{R}^4$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{P}(\text{O})(\text{OR}^4)_2$ ,  $-\text{P}(\text{O})(\text{NR}^4\text{R}^5)_2$ , and  $-\text{P}(\text{O})(\text{NR}^4\text{R}^5)(\text{OR}^4)$ , where  $\text{R}^4$ ,  $\text{R}^5$ , and  $\text{R}^6$  are each independently selected in each occurrence from the group consisting of hydrogen,  $\text{C}_1\text{-C}_6$  alkyl,  $\text{C}_3\text{-C}_8$  cycloalkyl,  $\text{C}_1\text{-C}_6$  haloalkyl, optionally substituted phenyl, and optionally substituted phenyl- $\text{C}_1\text{-C}_6$  alkyl; or

when X and Y are taken together to form  $=\text{NNR}^2\text{R}^3$ ,  $\text{R}^2$  and  $\text{R}^3$  are

25 taken together with the attached nitrogen to form an optionally substituted heterocycle;

providing that Y and  $\text{R}^1$  are not both alkyl; $\text{R}^A$  represents 1-4 substituents each independently selected from the group consisting of hydrogen and a radical  $-(\text{CH}_2)_m\text{Z}'$ , where m' is an integer from

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0-6 and Z' is selected from the group consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzoxyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino,

- 5 (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z' is selected from the group
- 10 consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4'</sup>, -CONR<sup>5'</sup>R<sup>6'</sup>, -P(O)(OR<sup>4'</sup>)<sub>2</sub>, -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)<sub>2</sub>, and -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)(OR<sup>4'</sup>), where R<sup>4'</sup>, R<sup>5'</sup>, and R<sup>6'</sup> are each independently selected in each occurrence from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl; or

- 15 R<sup>A</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted carbocycle or an optionally substituted heterocycle, and the remaining 2 substituents are each independently selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m</sub>Z', where m' is an integer from 0-6 and Z' is selected from the
- 20 group consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzoxyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4'</sup>, -CONR<sup>5'</sup>R<sup>6'</sup>, -P(O)(OR<sup>4'</sup>)<sub>2</sub>, -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)<sub>2</sub>, and -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)(OR<sup>4'</sup>), where R<sup>4'</sup>, R<sup>5'</sup>, and R<sup>6'</sup> are each independently selected in each occurrence from the group consisting of
- 25 hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4'</sup>, -CONR<sup>5'</sup>R<sup>6'</sup>, -P(O)(OR<sup>4'</sup>)<sub>2</sub>, -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)<sub>2</sub>, and -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)(OR<sup>4'</sup>), where R<sup>4'</sup>, R<sup>5'</sup>, and R<sup>6'</sup> are each independently selected in each occurrence from the group consisting of
- 30 hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl; and

**AMENDED SHEET**

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- $R^B$  represents 1-4 substituents each independently selected from the group consisting of hydrogen and a radical  $-(CH_2)_m''Z''$ , where  $m''$  is an integer from 0-6 and  $Z''$  is selected from the group consisting of halogen, hydroxy,  $C_1-C_6$  alkanoyloxy, optionally substituted benzyloxy,  $C_1-C_6$  alkyl,  $C_1-C_6$  alkoxy,  $C_3-C_8$  cycloalkyl,  $C_3-C_8$  cycloalkoxy,  $C_2-C_6$  alkenyl,  $C_2-C_6$  alkynyl,  $C_1-C_6$  haloalkyl,  $C_1-C_6$  haloalkoxy,  $C_3-C_8$  halocycloalkyl,  $C_3-C_8$  halocycloalkoxy, amino,  $C_1-C_6$  alkylamino,  $(C_1-C_6$  alkyl) $(C_1-C_6$  alkyl)amino, alkylcarbonylamino,  $N-(C_1-C_6$  alkyl)alkylcarbonylamino, aminoalkyl,  $C_1-C_6$  alkylaminoalkyl,  $(C_1-C_6$  alkyl) $(C_1-C_6$  alkyl)aminoalkyl, alkylcarbonylaminoalkyl,  $N-(C_1-C_6$  alkyl)alkylcarbonylaminoalkyl, cyano, nitro,  $C_1-C_6$  alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or  $Z''$  is selected from the group consisting of  $-N_3$ ,  $-CO_2R^{4''}$ ,  $-CONR^{5''}R^{6''}$ ,  $-P(O)(OR^{4''})_2$ ,  $-P(O)(NR^{4''}R^{5''})_2$ , and  $-P(O)(NR^{4''}R^{5''})(OR^{4''})$ , where  $R^{4''}$ ,  $R^{5''}$ , and  $R^{6''}$  are each independently selected in each occurrence from the group consisting of hydrogen,  $C_1-C_6$  alkyl,  $C_3-C_8$  cycloalkyl,  $C_1-C_6$  haloalkyl, optionally substituted phenyl, and optionally substituted phenyl- $C_1-C_6$  alkyl; or

- $R^B$  represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted carbocycle or an optionally substituted heterocycle, and the remaining 2 substituents are each independently selected from the group consisting of hydrogen and a radical  $-(CH_2)_m''Z''$ , where  $m''$  is an integer from 0-6 and  $Z''$  is selected from the group consisting of halogen, hydroxy,  $C_1-C_6$  alkanoyloxy, optionally substituted benzyloxy,  $C_1-C_6$  alkyl,  $C_1-C_6$  alkoxy,  $C_3-C_8$  cycloalkyl,  $C_3-C_8$  cycloalkoxy,  $C_2-C_6$  alkenyl,  $C_2-C_6$  alkynyl,  $C_1-C_6$  haloalkyl,  $C_1-C_6$  haloalkoxy,  $C_3-C_8$  halocycloalkyl,  $C_3-C_8$  halocycloalkoxy, amino,  $C_1-C_6$  alkylamino,  $(C_1-C_6$  alkyl) $(C_1-C_6$  alkyl)amino, alkylcarbonylamino,  $N-(C_1-C_6$  alkyl)alkylcarbonylamino, aminoalkyl,  $C_1-C_6$  alkylaminoalkyl,  $(C_1-C_6$  alkyl) $(C_1-C_6$  alkyl)aminoalkyl, alkylcarbonylaminoalkyl,  $N-(C_1-C_6$  alkyl)alkylcarbonylaminoalkyl, cyano, nitro,  $C_1-C_6$  alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or  $Z''$  is selected from the group consisting of  $-N_3$ ,  $-CO_2R^{4''}$ ,  $-CONR^{5''}R^{6''}$ ,  $-P(O)(OR^{4''})_2$ ,  $-P(O)(NR^{4''}R^{5''})_2$ , and  $-P(O)(NR^{4''}R^{5''})(OR^{4''})$ , where  $R^{4''}$ ,  $R^{5''}$ , and  $R^{6''}$  are each independently selected in each occurrence from the group consisting of

**AMENDED SHEET**

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hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl is described.

2. The compound of claim 1, wherein X and Y are taken together to form =CR<sup>2</sup>R<sup>3</sup>.

5 3. The compound of claim 1, wherein X and Y are taken together to form =CR<sup>2</sup>R<sup>3</sup>, and the carbon-carbon double bond formed thereby is an E-double bond.

4. The compound of claim 1, wherein Z is selected from the group consisting of hydroxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, and nitro.

10 5. The compound of claim 1, wherein Z' is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkoxy and nitro.

6. The compound of claim 1, wherein Z" is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkoxy and nitro.

7. The compound of claim 1, wherein X and Y are taken together to form =CR<sup>2</sup>R<sup>3</sup>; and R<sup>2</sup> is C<sub>1</sub>-C<sub>6</sub> haloalkyl or aminoalkyl; and R<sup>1</sup> is hydrogen.

15 8. The compound of claim 1, wherein R<sup>B</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted heterocycle.

9. The compound of claim 1, wherein R<sup>B</sup> represents 2-4 substituents where 2 of the substituents are adjacent substituents and are taken together with the attached carbons to form an heterocycle selected from the group consisting of dioxolane and dioxane.

20 10. The compound of claim 1, wherein R<sup>B</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted heterocycle; and Z" is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkoxy and nitro.

11. The compound of claim 1, wherein Q is oxygen; and R<sup>A</sup> is 2,3-bis(C<sub>1</sub>-C<sub>6</sub> alkoxy).

25 12. The compound of claim 1, wherein Q is oxygen; and R<sup>1</sup> is C<sub>1</sub>-C<sub>6</sub> alkyl, aminoalkyl, or C<sub>1</sub>-C<sub>6</sub> haloalkyl.

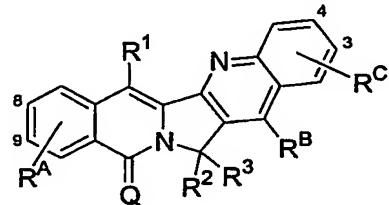
30 13. The compound of claim 1, wherein Q is oxygen, R<sup>A</sup> is 2,3-bis(C<sub>1</sub>-C<sub>6</sub> alkoxy), R<sup>B</sup> is 8,9-alkylenedioxy, and X and Y are taken together to form =CR<sup>2</sup>R<sup>3</sup>, where R<sup>2</sup> is hydrogen.

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14. The compound of claim 1, wherein Q is oxygen, R<sup>A</sup> is 2,3-bis(C<sub>1</sub>-C<sub>6</sub> alkoxy), R<sup>B</sup> is 8,9-alkylenedioxy, X and Y are taken together to form =CR<sup>2</sup>R<sup>3</sup>, R<sup>2</sup> is hydrogen, and R<sup>1</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, amino-C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino-C<sub>1</sub>-C<sub>6</sub> alkyl, or  
5 (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino-C<sub>1</sub>-C<sub>6</sub> alkyl.

15. A compound of the formula:



wherein

Q is oxygen or sulfur;

- 10 R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are each independently selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m</sub>Z, where m is an integer from 0-6 and Z is selected from the group consisting of halogen, hydroxy, formyl, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzoxyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and  
15 optionally substituted heteroaryl; or Z is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -P(O)(OR<sup>4</sup>)<sub>2</sub>, -P(O)(NR<sup>4</sup>R<sup>5</sup>)<sub>2</sub>, and -P(O)(NR<sup>4</sup>R<sup>5</sup>)(OR<sup>4</sup>), where R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are each independently selected in each occurrence from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl; or  
20

- 25 R<sup>1</sup> is selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m</sub>Z, where m is an integer from 0-6 and Z is selected from the group consisting of halogen, hydroxy, formyl, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzoxyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub>

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halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -P(O)(OR<sup>4</sup>)<sub>2</sub>, -P(O)(NR<sup>4</sup>R<sup>5</sup>)<sub>2</sub>, and -P(O)(NR<sup>4</sup>R<sup>5</sup>)(OR<sup>4</sup>), where R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are each independently selected in each occurrence from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and 10 optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl; and R<sup>2</sup> and R<sup>3</sup> are taken together with the attached carbon to form an optionally substituted carbocycle or heterocycle;

R<sup>A</sup> represents 1-4 substituents each consisting of a radical -(CH<sub>2</sub>)<sub>m</sub>Z', where m' is an integer from 0-6 and Z' is selected from the group consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, 15 C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, 20 cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -P(O)(OR<sup>4</sup>)<sub>2</sub>, -P(O)(NR<sup>4</sup>R<sup>5</sup>)<sub>2</sub>, and -P(O)(NR<sup>4</sup>R<sup>5</sup>)(OR<sup>4</sup>), where R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are each independently selected in each occurrence from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, 25 optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl, providing that at least one of R<sup>A</sup> is at carbon 8 or carbon 9; in the formula; or

R<sup>A</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted carbocycle or an optionally substituted heterocycle, and the remaining 2 30 substituents are each independently selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m</sub>Z', where m' is an integer from 0-6 and Z' is selected from the group consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub>

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alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl,  
C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino,  
alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub>

- alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-  
5 (C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally  
substituted phenyl, optionally substituted phenoxy, and optionally substituted  
heteroaryl; or Z' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4'</sup>, -CONR<sup>5'</sup>R<sup>6'</sup>,  
-P(O)(OR<sup>4'</sup>)<sub>2</sub>, -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)<sub>2</sub>, and -P(O)(NR<sup>4'</sup>R<sup>5'</sup>)(OR<sup>4'</sup>), where R<sup>4'</sup>, R<sup>5'</sup>, and R<sup>6'</sup> are  
each independently selected in each occurrence from the group consisting of  
10 hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted  
phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl;

R<sup>B</sup> is selected from the group consisting of hydrogen and a radical  
-(CH<sub>2</sub>)<sub>m''</sub>Z'', where m'' is an integer from 0-6 and Z'' is selected from the group  
consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted

- 15 benzyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub>  
alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl,  
C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino,  
alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub>  
alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-  
20 (C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally  
substituted phenyl, optionally substituted phenoxy, and optionally substituted  
heteroaryl; or Z'' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4''</sup>, -CONR<sup>5''</sup>R<sup>6''</sup>,  
-P(O)(OR<sup>4''</sup>)<sub>2</sub>, -P(O)(NR<sup>4''</sup>R<sup>5''</sup>)<sub>2</sub>, and -P(O)(NR<sup>4''</sup>R<sup>5''</sup>)(OR<sup>4''</sup>), where R<sup>4''</sup>, R<sup>5''</sup>, and R<sup>6''</sup>  
are each independently selected in each occurrence from the group consisting of  
25 hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted  
phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl; and'

R<sup>C</sup> represents 1-4 substituents each independently selected from the  
group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m'''</sub>Z''', where m''' is an integer from  
0-6 and Z''' is selected from the group consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub>  
30 alkanoyloxy, optionally substituted benzyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub>  
cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub>  
haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino,  
(C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub>

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alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z''' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4''</sup>, -CONR<sup>5''</sup>R<sup>6''</sup>, -P(O)(OR<sup>4''</sup>)<sub>2</sub>, -P(O)(NR<sup>4''</sup>R<sup>5''</sup>)<sub>2</sub>, and -P(O)(NR<sup>4''</sup>R<sup>5''</sup>)(OR<sup>4''</sup>), where R<sup>4''</sup>, R<sup>5''</sup>, and R<sup>6''</sup> are each independently selected in each occurrence from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl; or

R<sup>C</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted carbocycle or an optionally substituted heterocycle, and the remaining 2 substituents are each independently selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m''</sub>Z'', where m'' is an integer from 0-6 and Z'' is selected from the group consisting of halogen, hydroxy, C<sub>1</sub>-C<sub>6</sub> alkanoyloxy, optionally substituted benzyloxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkoxy, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkoxy, amino, C<sub>1</sub>-C<sub>6</sub> alkylamino, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, alkylcarbonylamino, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylamino, aminoalkyl, C<sub>1</sub>-C<sub>6</sub> alkylaminoalkyl, (C<sub>1</sub>-C<sub>6</sub> alkyl)(C<sub>1</sub>-C<sub>6</sub> alkyl)aminoalkyl, alkylcarbonylaminoalkyl, N-(C<sub>1</sub>-C<sub>6</sub> alkyl)alkylcarbonylaminoalkyl, cyano, nitro, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, optionally substituted phenyl, optionally substituted phenoxy, and optionally substituted heteroaryl; or Z''' is selected from the group consisting of -N<sub>3</sub>, -CO<sub>2</sub>R<sup>4''</sup>, -CONR<sup>5''</sup>R<sup>6''</sup>, -P(O)(OR<sup>4''</sup>)<sub>2</sub>, -P(O)(NR<sup>4''</sup>R<sup>5''</sup>)<sub>2</sub>, and -P(O)(NR<sup>4''</sup>R<sup>5''</sup>)(OR<sup>4''</sup>), where R<sup>4''</sup>, R<sup>5''</sup>, and R<sup>6''</sup> are each independently selected in each occurrence from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, optionally substituted phenyl, and optionally substituted phenyl-C<sub>1</sub>-C<sub>6</sub> alkyl is described.

16. The compound of claim 15, wherein at least one of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>A</sup>, R<sup>B</sup>, or R<sup>C</sup> is not hydrogen.

30 17. The compound of claim 15, wherein R<sup>A</sup> is 2,3-bis(C<sub>1</sub>-C<sub>6</sub> alkoxy).

18. The compound of claim 15, wherein Q is oxygen, R<sup>A</sup> is 2,3-bis(C<sub>1</sub>-C<sub>6</sub> alkoxy), and R<sup>B</sup>, R<sup>C</sup>, R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are each hydrogen.

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19. The compound of claim 15, wherein Z' is selected from the group consisting of hydroxy and nitro.

20. The compound of claim 15, wherein R<sup>A</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken 5 together with the attached carbons to form an optionally substituted carbocycle or an optionally substituted heterocycle, and the remaining 2 substituents are each independently selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m</sub>Z', where Z' is selected from the group consisting of hydroxy and nitro.

21. The compound of claim 15, wherein Z'' is nitro.

10 22. The compound of claim 15, wherein Z''' is nitro.

23. The compound of claim 15, wherein R<sup>C</sup> represents 2-4 substituents where 2 of said substituents are adjacent substituents and are taken together with the attached carbons to form an optionally substituted carbocycle or an 15 optionally substituted heterocycle, and the remaining 2 substituents are each independently selected from the group consisting of hydrogen and a radical -(CH<sub>2</sub>)<sub>m</sub>Z''; and Z''' is nitro.

24. A pharmaceutical composition comprising a compound of claim 1 or claim 15 and a pharmaceutically acceptable carrier, excipient, or diluent therefor.

20 25. A method for treating a mammal in need of relief from a disease state including cancer, comprising administering to the mammal an effective amount of a compound according to claim 1 or claim 15 or an effective amount of a pharmaceutical composition according to claim 24.

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